

ADDITIONAL NOTES ON THE GENUS *GEUNZIA*. IV

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*GEUNZIA* Blume

Additional & emended bibliography: Reichenb., *Deutsch. Bot. [Repert. Herb. Nom.]* 108. 1841; Ridl., *Journ. Roy. Asiat. Soc. Straits* 59: 155. 1911; Fletcher, *Kew Bull. Misc. Inf.* 1938: 404, 406, 407, 409, & 415. 1938; Cronquist, *Integ. Syst. Classif.* 922. 1981; Mold., *Phytologia* 50: 216--226, 253, 254, 258, 260, 268, 269, & 292--296. 1982.

*GEUNZIA ACUMINATISSIMA* (Teijsm. & Binn.) H. J. Lam

Additional bibliography: Mold., *Phytologia* 50: 52, 55, 57--58, & 67 (1981) and 50: 146, 151, 216, & 218. 1982.

*GEUNZIA APOENSIS* (Elm.) Mold.

Additional bibliography: Mold., *Phytologia* 50: 55 & 60--62 (1981) and 50: 258, 260, & 268. 1982.

*GEUNZIA CINNAMOMEA* H. Hallier

Additional bibliography: Mold., *Phytologia* 50: 56 & 62--64 (1981) and 50: 293. 1982.

*GEUNZIA CUMINGIANA* (Schau.) Rolfe

Additional bibliography: Mold., *Phytologia* 50: 143--146, 150, 216, 218, 253, 257, 293, & 295. 1982.

*GEUNZIA CUMINGIANA* var. *DENTATA* (Bakh.) Mold.

Additional bibliography: Mold., *Phytologia* 50: 144, 146, & 218. 1982.

*GEUNZIA FARINOSA* Blume

Additional bibliography: Ridl., *Journ. Roy. Asiat. Soc. Straits* 59: 155. 1911; Mold., *Phytologia* 50: 216--220, 224, 253, 268, 293, & 295. 1982.

*GEUNZIA FARINOSA* var. *CALLICARPOIDES* H. J. Lam

Additional bibliography: Mold., *Phytologia* 50: 220, 253, & 268. 1982.

*GEUNZIA FARINOSA* f. *SERRATULA* Mold.

Additional bibliography: Mold., *Phytologia* 50: 220, 253, & 268. 1982.

*GEUNZIA FLAVIDA* (Elm.) H. J. Lam

Additional bibliography: Mold., *Phytologia* 50: 220--222 & 258. 1982.

*GEUNZIA FURFURACEA* (Bakh.) Mold.

Additional bibliography: Mold., *Phytologia* 50: 218, 222--225, & 254. 1982.

It should be pointed out that if the *G. subternata* of Hallier actually is conspecific with the taxon now passing as *G. furfuracea*, as seems most likely, that it will have to be accepted as the valid name for the taxon since it was proposed in 1918, while the name now being used was not proposed (as a species) until 1945. There is, however, still some doubt as to whether the two are actually conspecific.

*GEUNZIA HOMOEOPHYLLA* H. Hallier

Additional bibliography: Mold., *Phytologia* 50: 260 & 295--296. 1982.

Lam's (1919) statement about how this species differs from *G. pullei*, begun at the close of my previous installment of these notes, continues: *G. homoeophylla* "is different in.....the long and narrow (not short and broad) anthers, which are 0.3 (not 0.1 cm.) long. It agrees with *G. Pullei* in the tomentum of the leaves, the pubescent corolla, and the glabrous ovary."

Recent collectors have encountered *G. homoeophylla* at 280 m. altitude on Celebes. Material has been misidentified and distributed in some herbaria as *Callicarpa pentandra* var. *paloensis* f. *apoensis* Bakh. and *C. pentandra* var. *paloensis* f. *furfuracea* Bakh.

Citations: GREATER SUNDA ISLANDS: Celebes: *Binnemeijer 10869* (Bz--18239, Ca--236611, Hk). Kalimantan: *Hallier B.348* (Bz--18270--isotype, Bz--18271--isotype, Bz--18272--isotype, Ca--236937--isotype, Le--918.302-24--type, Z--isotype).

*GEUNZIA PALOENSIS* (Elm.) H. J. Lam ex Mold., *Resume* 245, *hyponym*. 1959, *comb. nov.*

Synonymy: *Callicarpa paloensis* Elm., *Leafl. Philip. Bot.* 1: 336--337. 1908. *Callicarpa pentandra* var. *paloensis* (Elm.) Bakh., *Bull. Jard. Bot. Buitenz.*, ser. 3, 3: 14. 1921. *Callicarpa pentandra* var. *paloensis* f. *typica* Bakh., *Bull. Jard. Bot. Buitenz.*, ser. 3, 3: 14. 1921. *Callicarpa pentandra* var. *paloensis* Bakh. apud E. D. Merr., *Enum. Philip. Flow. Pl.* 3: 387, in syn. 1923. *Geunsia paloensis* H. Lam apud E. D. Merr., *Enum. Philip. Flow. Pl.* 3: 387, in syn. 1923. *Callicarpa sorsogonensis* Elm. ex Mold., *Prelim. Alph. List Inv. Names* 13, in syn. 1940. *Callicarpa paloensis* Elm. ex Mold., *Known Geogr. Distrib. Verbenac.*, ed. 1, 62, 65, & 87. 1949.

Bibliography: Elm., *Leafl. Philip. Bot.* 1: 336--337 (1908). 2: 514 (1908), and 3: 864. 1910; Prain, *Ind. Kew. Suppl.* 4, imp. 1, 34. 1913; H. J. Lam, *Verbenac. Malay. Arch.* 49, 78--79, & 362. 1919; Fedde & Schust., *Justs Bot. Jahresber.* 50 (1): 1070. 1932; Bakh. in Lam & Bakh., *Bull. Jard. Bot. Buitenz.*, ser. 3, 3: 14, 107, & viii. 1921; E. D. Merr., *Enum. Philip. Flow. Pl.* 3: 387. 1923; Elm., *Leafl. Philip. Bot.* 10: 3860. 1939; Mold., *Prelim. Alph. List Inv. Names* 12 & 26. 1940; Mold., *Alph. List Inv. Names* 10 & 11. 1940; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 1, 62,

65, & 87. 1942; Mold., *Alph. List Cit.* 2: 462 (1948) and 3: 841. 1949; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 2, 141, 146, & 177. 1949; Mold., *Phytologia* 5: 28 & 30. 1954; Prain, *Ind. Kew. Suppl.* 4, imp. 2, 34. 1958; Mold., *Résumé* 184, 195, 245--247, 295, & 455. 1959; Mold., *Fifth Summ.* 1: 317, 324, 415, 416, & 418 (1971) and 2: 519 & 878. 1971; Altschul, *Drugs Foods* 245. 1973; Mold., *Phytologia* 33: 391. 1976; Mold., *Phytol. Mem.* 2: 307, 315, & 548. 1980; Mold., *Phytologia* 50: 55 & 60--62 (1981) and 50: 144, 218, 221, 224, 268, & 269. 1982.

An erect tree, to 9 m. tall; trunk to 20 cm. in diameter at breast height; crown umbrella-shaped; branchlets rather slender, obtusely tetragonal, yellow-hairy or honey-color-pulverulent; leaves arranged in one opposite pair, followed by 1 or 2 alternate ones, or all opposite; petioles 1.5--3 cm. long, straight, canalliculate above, yellow-hairy; leaf-blades coriaceous, flat, broadly lanceolate or lanceolate-oblong, to 20 cm. long and 6 cm. wide, apically gradually attenuate-acute or acuminate, marginally sub-undulate and entire or involute, basally gradually acuminate or cuneate to attenuate, stellate-hairy above when young but glabrescent when adult, densely stellate-hairy or subappressed-farinose beneath, honey-colored in drying; secondaries 9--11 per side, very prominent beneath, ascending-curved; tertiaries quite conspicuous as crossbars between the secondaries; cymes terminal or sub-terminal to axillary in the axils of the upper leaves, medium in size, 7--9 cm. long, yellowish-hairy throughout; peduncles 3--5 cm. long, ascending during anthesis, pubescent; inflorescence-branches successively shorter and thinner, each pair subtended by a pair of bracts; flowers glomerate, subsessile, tetramerous; calyx turbinate, 1--1.5 mm. long, apically 1 mm. wide, quite rigid, externally densely stellate-pubescent or farinose, the rim truncate or subtruncate, 4-mucronulate; corolla campanulate, violet or lilac to pink, 2.5 mm. long, externally glabrous, the limb 4-lobed, the lobes about 0.75 mm. long, apically rounded, basally abruptly constricted; stamens 4, inserted in the throat of the corolla-tube; filaments somewhat exerted, flexuous, glabrous; anthers oblong, about 1 mm. long and 0.5 mm. wide; pistil bicarpellary; style slender, somewhat exerted, flexuous, glabrous, slightly surpassing the stamens; stigma flat and broadly expanded; ovary small, externally somewhat pilosulous; fruiting-calyx subscutelliform, enclosing the base of the fruit; fruit drupaceous, small, globose, about 2 mm. long and wide, at first lilac, red, or bright-pink, scarlet when ripe, 4-celled, the cells simple and each 1-seeded; seeds osseous, about 1.75 mm. long and 1 mm. wide, tapering at both ends, ventrally convex, the two lateral sides plane.

The species is based on *Elmer* 7370 from light woods, 300 m. altitude, at Palo, Leyte, Philippine Islands. Lam (1919) comments that "We did not see any specimens of this species, but we think it is a doubtful one [in *Callicarpa*]; the leaves should be 'scattered along the branchlets'; if this means: alternate, then the species would be a 4-merous *Geunisia*. The indication: 'Cymes

terminal of [=or] †terminal or in the axils of the upper leaves' is not clear. If there are really true terminal inflorescences, it is evident, that this cannot be a *Callicarpa*. So the terms: 'stamens inserted upon the throat of the constriction', and 'fruit 4-celled, 4-seeded' indicate the same. Perhaps it is not even a *Verbenacea*."

*Callicarpa sorsogonensis* is based on Elmer 14513 from Irosin (Mt. Bulusan), Sorsogon Province, Luzon.

Collectors describe *Geunsia paloensis* as a tree, 2--7 m. tall, and have encountered it on mossy forested slopes and along brooks in secondary forests, at 5025 feet altitude, in anthesis in May and August, and in fruit in October. The corollas are said to have been "violet" in color on *Herb. Philip. Bur. Sci.* 45741.

The *Kajewski 2540*, cited by Altschul (1973) as the source of her information about supposed medicinal uses of this plant, actually is *G. pentandra* var. *albidella* Mold.

The *Rachmat 839*, cited below, is cited by Bakhuizen as one of the cotype collections of *Callicarpa pentandra* var. *paloensis* f. *furfuracea* Bakh., but he himself changed its designation to "f. *genuina* (?)" later, so I am excluding it from the cotypes of *Geunsia furfuracea* (Bakh.) Mold.

Merrill (1923) cites Elmer 7370, 14510, & 16939 from Leyte and Luzon, where he says *G. paloensis* grows in forests at about 300 m. altitude. He comments that it is "Very closely allied to *C. flavida* Elm. but with smaller flowers and fruits; remote from *C. magna* Schauer, where Bakhuizen places it as a synonym. Endemic."

Material of *G. paloensis* has been misidentified and distributed in some herbaria as *G. farinosa* Blume, *Callicarpa cumingiana* Schau., *C. pentandra* Roxb., *C. pentandra* var. *paloensis* f. *furfuracea* Bakh., *C. pentandra* var. *repleta* f. *furfuracea* Bakh., and *C. tomentosa* var. *magna* (Schau.) Bakh. On the other hand, the *Ramos & Edaño s.n.* [*Herb. Philip. Bur. Sci.* 44362] and *Wing A.285*, distributed as *G. paloensis*, actually are *G. pentandra* (Roxb.) Merr., while *Draper s.n.* is *Callicarpa caudata* Maxim.

Citations: PHILIPPINE ISLANDS: Balabac: *Ramos & Edaño s.n.* [*Herb. Philip. Bur. Sci.* 49732] (Ca--359474, N). Leyte: Elmer 7370 (Bz--18322--isotype, N--isotype). Luzon: Elmer 14513 (Bz--18683, Ca--272667, Mi, N, S, Ut--66079, W--894257), 16939 (Bz--18685, Ca--272869, Du--175086, N, S, Um--85, Ut--65987, W--894256); *M. Ramos s.n.* [*Herb. Philip. Bur. Sci.* 23582] (N, W--23582); *Ramos & Edaño s.n.* [*Herb. Philip. Bur. Sci.* 45741] (Ca--309576, N). GREATER SUNDA ISLANDS: Celebes: *Hoorustra 47* [Bosch-prof. BB.11429] (Bz--18303, Bz--18304); *Rachmat 839* (Bz--18301).

*GEUNZIA PALOENSIS* var. *CELEBICA* (Koord.) Mold., *Phytologia* 5: 8 & 10. 1954.

Synonymy: *Geunsia celebica* Koord. ex Bakh. in Lam & Bakh., *Bull. Jard. Bot. Buitenz.*, ser. 3, 3: 14, in syn. 1921. *Callicarpa pentandra* var. *paloensis* f. *celebica* (Koord.) Bakh. in Lam

& Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 14--15 & xi. 1921. *Callicarpa pentandra* var. *repleta* f. *celebica* (Koord.) Bakh. ex Mold., Résumé 246, in syn. 1959.

Bibliography: Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 14--15, 111, & xi. 1921; A. W. Hill, Ind. Kew. Suppl. 7: 102. 1929; Fedde & Schust., Justs Bot. Jahresber. 53 (1): 1070. 1932; Mold., Résumé 195, 246, 295, & 455. 1959; Mold., Phytologia 22: 20. 1971; Mold., Fifth Summ. 1: 324 & 415 (1971) and 2: 519 & 878. 1971; Mold., Phytol. Mem. 2: 315 & 548. 1980; Mold., Phytologia 50: 55 (1981) and 50: 268. 1982.

This variety differs from the typical form of the species in its leaf-blades being merely arachnoid and silvery beneath, rather than furfuraceous and yellowish.

Branchlets thick, obtusely tetragonal; leaves arranged as a single opposite pair followed by 1 or 2 alternate ones, rarely all opposite; petioles 2--3 cm. long; leaf-blades ovate or broadly oblong, 15--25 cm. long, 5--10 cm. wide, apically abruptly and acutely short-acuminate, marginally entire, basally obtuse to broadly rounded, glabrescent above when mature (except for the veins), subrugose and appressed-white-tomentellous beneath, glabrous on the larger veins, appressed-lanate between them, silvery-white in drying; secondaries 7--12 per side; cymes medium-size, 6--9 cm. long; peduncles 2.5--6 cm. long; flowers usually 5- or 6-merous; calyx 1--2 mm. long, externally sparsely pilose or subglabrous, the rim shortly 5- or 6-dentate; corolla violet or red-violet, 4--5 mm. long, externally glabrous, mostly 5--7-lobed, rarely 4-lobed; stamens 5, 6--8 mm. long, long-exserted; anthers oblong or lanceolate, 1.5--2 mm. long; fruiting-calyx cupuliform, to twice as long as before, enclosing the lower half of the fruit; fruit drupaceous, rather large, subappressed-globose, red when mature, 5-celled, the cells bipartite, each part 1-seeded; seeds ten.

This variety is apparently endemic to Celebes and is based on Koorders 19488, 19499, 19509, & 19714 from Ratahan and Loeboe, with the type collection not designated. Bakhuisen (1921) cites also Riedel s.n. from Menado, near Gorontalo. The plant has been collected in flower in April. The corollas are said to have been "violet" in color on Koorders 19488b and "red-violet" on Kjellberg 1158.

The Ramos & Edaño s.n. [Herb. Philip. Bur. Sci. 29707], distributed as *Geunsia paloensis* var. *celebica*, actually is *Callicarpa subintegra* Merr.

Citations: GREATER SUNDA ISLANDS: Celebes: Kjellberg 1158 (Bz--18249); Koorders 19488b [2326] (Bz--18255--cotype, Bz--18256--cotype), 19500b [2230] (Bz--18253--cotype, Bz--18254--cotype, Z--cotype), 19714b (Bz--18251--cotype); Riedel s.n. [Gorontalo] (Bz--18250).

*GEUNZIA PALOENSIS* var. *SERRATA* Mold., Phytologia 5: 10. 1954.

Bibliography: Mold., Phytologia 5: 10. 1954; Mold., Résumé 195 & 455. 1959; Mold., Fifth Summ. 1: 324 (1971) and 2: 878. 1971;

Mold., Phytol. Mem. 2: 315 & 548. 1980; Mold., Phytologia 50: 55 (1981) and 50: 269. 1982.

This variety differs from the typical form of the species in having the leaves very thin-membranous in texture, broadly elliptic-ovate, and distinctly serrate-margined from near the base to the apex.

The variety is based on *Koorders 19499b* from Loeboe, Menado, prov. Minahassa, Celebes, collected on March 21, 1895, and deposited in the Buitenzorg herbarium. Thus far it is known only from the original collection which has been variously annotated as *Callicarpa magna* Schau., *C. pentandra* var. *paloensis* f. *celebica* (Koord.) Bakh., and *C. pentandra* var. *repleta* f. *celebica* (Koord.) Bakh.

Citations: GREATER SUNDA ISLANDS: Celebes: *Koorders 19499b* [2229] (Bz--18252--type).

*GEUNSIDA PENTANDRA* (Roxb.) Merr., Philip. Journ. Sci. Bot. 11: 309. 1916.

Synonymy: *Callicarpa pentandra* Roxb., Hort. Brng., imp. 1, [83], nom. nud. 1814; Fl. Ind., ed. 1, imp. 1, 1: 409. 1820. *Callicarpa lanata* Roxb. ex W. Griff., Notul. Pl. Asiatic. 4: 173 & 747, sphalm. 1854. *Callicarpa lanata* W. Griff. ex C. B. Clarke in Hook. f., Fl. Brit. India 4: 568, in nota. 1885. *Callicarpa subglandulosa* Elm., Leaflet. Philip. Bot. 2: 513. 1908. *Geunsia hookeri* Merr., Philip. Journ. Sci. Bot. 7: 342--343. 1912. *Callicarpa pentandra* Schau. ex E. D. Merr., Philip. Journ. Sci. Bot. 7: 342, in syn. 1912. *Callicarpa pentandra* var. *typica* (Schau.) Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 12. 1921. *Callicarpa pentandra* var. *typica* f. *typica* Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 12--13. 1921. *Geunsia pentandra* Merrill ex Anon., Kew Bull. Gen. Ind. 1929-1956: 132. 1959. *Geunsia arborea* Blume ex Mold., Résumé 295, in syn. 1959. *Premna pentandra* Roxb. ex Mold., Résumé Suppl. 15: 22, in syn. 1967. *Premna pentandra* Roxb. ex Mold., Résumé Suppl. 15: 22, in syn. 1959. *Callicarpa pentandra* Roxb. ex Mold., Fifth Summ. 1: 415, in syn. 1971. *Callicarpa pentandra* f. *glabra* Bakh. ex Mold., Fifth Summ. 1: 415, in syn. 1971. *Callicarpa pentandra* f. *glabrescens* Bakh. ex Mold., Fifth Summ. 1: 415, in syn. 1971. *Callicarpa pentandra* f. *pubescens* Bakh. ex Mold., Fifth Summ. 1: 416, in syn. 1971. *Callicarpa pentandra* var. *typica* f. *genuina* Bakh. ex Mold., Fifth Summ. 1: 416, in syn. 1971. *Geunsia pentandra* Merr. ex Mold., Fifth Summ. 2: 520, in syn. 1971. *Callicarpa pentandra* var. *typica* f. *genuina* Bakh. f. ex Foreman, Div. Bot. Dept. For. N. Guin. Bot. Bull. 5: 63, sphalm. 1972. *Callicarpa pentandra* var. *pentandra* (Bl.) Bakh. ex Mold., Phytol. Mem. 2: 378, in syn. 1980. *Callicarpa pentandra* var. *typica* (Schum.) Bakh. ex Mold., Phytol. Mem. 2: 378, in syn. 1980.

Bibliography: Neck., Elem. Bot. 1: 331. 1790; Roxb., Hort. Beng., imp. 1, [83]. 1814; Roxb., Fl. Ind., ed. 1, imp. 1, 1: 409 & 481 (1820) and ed. 2, 1: 391 & 395. 1832; Voigt, Hort. Suburb. Calc. 473. 1845; Walp., Repert. Bot. Syst. 4: 131. 1845; Schau. in

- A. DC., Prodr. 11: 646. 1847; W. Griff., Notul. Pl. Asiat. 4: 173 & 747. 1854; W. Griff., Icon. Pl. Asiat. 4: pl. 447, fig. 2. 1854; Buek, Gen. Spec. Syn. Candoll. 3: 73. 1858; Miq., Fl. Ind. Bat. 2: 384--385. 1858; Miq., Fl. Ind. Bat. Suppl. 1: 243. 1860; Bocq., Adansonia, ser. 1, 3: 185--186. 1862; Roxb., Fl. Ind., ed. 3, 132. 1874; Benth. in Benth. & Hook., Gen. Pl. 2 (2): 1150. 1876; C. B. Clarke in Hook. f., Fl. Brit. India 4: 568. 1885; Warb., Engl. Bot. Jahrb. 13: 426. 1890; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 386. 1893; Koord., Meded. Lands Plant. Tuin. Buitenz. 19: 561. 1898; Koord. & Val., Meded. Lands Plant. Bat. 42 [Bijdr. Booms. Java 7]: 173. 1900; Elm., Leafl. Philip. Bot. 2: 513. 1908; Gamble in King & Gamble, Journ. Asiat. Soc. Beng. 74 (2 extra): 801. 1908; E. D. Merr., Philip. Journ. Sci. Bot. 7: 342--343. 1912; Fedde & Schust., Justs Bot. Jahresber. 40 (2): 335. 1915; E. D. Merr., Philip. Journ. Sci. Bot. 11: 309. 1916; Heyne, Nutt. Plant. Ned. Ind., ed. 1, 4: 106--107. 1917; H. Hallier, Meded. Rijks Herb. Leid. 37: 23. 1918; H. J. Lam, Verbenac. Malay. Arch. 31, 33--35, 362, & 365. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 9, 11--17, 109, 111, vii, & xii. 1921; Prain, Ind. Kew. Suppl. 5, imp. 1, 113. 1921; Fedde & Schust., Justs Bot. Jahresber. 44: 254. 1922; E. D. Merr., Enum. Philip. Flow. Pl. 382, 383, & 386--388. 1923; A. W. Hill, Ind. Kew. Suppl. 6: 91. 1926; Fedde, Justs Bot. Jahresber. 44: 1383 & 1425. 1927; Bakh., Journ. Arnold Arb. 10: [69]. 1929; A. W. Hill, Ind. Kew. Suppl. 7: 102. 1929; C. T. White, Journ. Arnold Arb. 10: 263. 1929; Fedde & Schust., Justs Bot. Jahresber. 53 (1): 1070--1071. 1932; Fletcher, Kew Bull. Misc. Inf. 1938: 404, 407, & 415. 1938; A. W. Hill, Ind. Kew. Suppl. 9: 46. 1938; Elm., Leafl. Philip. Bot. 10: 3860. 1939; Mold., Prelim. Alph. List Inv. Names 12 & 26. 1940; Fedde & Schust., Justs Bot. Jahresber. 60 (2): 573. 1941; Mold., Alph. List Inv. Names 10, 11, 24, & 25. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 60--68 & 93. 1942; Lam & Meeuse, Blumea 5: 236. 1945; Mold., Phytologia 2: 103. 1945; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 386. 1946; Mold., Alph. List Inv. Names Suppl. 1: 3. 1947; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 127, 137, 139, 141, 143--150, & 185. 1949; Chang, Act. Phytotax. Sin. 1: 271 & 310. 1951; Anon., Kew Bull. Gen. Ind. 1929-1956: 132. 1959; Mold., Résumé 163, 178, 180, 184, 188, 190, 192, 193, 195, 197, 199, 201, 204, 218, 246, 247, 295, 455, & 456. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 386. 1960; Prain, Ind. Kew. Suppl. 5, imp. 2, 113. 1960; Hansford, Sydowia Ann. Myc., ser. 2, Beih. 2: 685. 1961; Hegnauer, Chemotax. Pfl. 3: 39. 1964; Backer & Bakh., Fl. Java 2: 600. 1965; Whitmore, Guide Forests Brit. Solomon Isls. 170. 1966; Van Steenis, Blumea 15: 151. 1967; Meijer, Bot. Bull. Herb. Forest Dept. Sandakan 10: 24, 27, 223, & opp. 224. 1968; Mold., Résumé Suppl. 17: 13. 1968; Mold., Fifth Summ. 1: 276, 296, 305, 317, 324, 330, 332, 336, 340, 363, 415, 416, & 418 (1971) and 2: 519, 520, 610, 878, 879, 969, & 971. 1971; Mold., Phytologia 21: 232, 384, & 470 (1971) and 22: 23 & 25. 1971; Foreman, Bot. Bull. Div. Bot. Dept. For. N. Guinea 5: 63. 1972; Hartley, Dunstone, Fitzg., Johns, & Lamberton, Lloydia 36: 293. 1973; Farnsworth,

Pharmacog. Titles 9 (1): xii. 1974; Mold., *Phytologia* 28: 454. 1974; Roxb., *Fl. Ind.*, ed. 1, imp. 2, 1: 409. 1975; Mold., *Phytologia* 34: 272 (1976), 36: 38 (1977), and 40: 425. 1978; Mold., *Phytol. Mem.* 2: 262, 273, 286, 296, 307, 315, 320, 322, 326, 330, 354, 377, 378, & 548. 1980; Roxb., *Hort. Beng.*, imp. 2, [83]. 1980; Mold., *Phytologia* 49: 474 (1981), 50: 52, 55, 58, 60--62, 64, 65, & 67 (1981), and 50: 144, 151, 216, 218, 224, 226, 260, 268, 293, & 295. 1982.

Illustrations: W. Griff., *Icon. Pl. Asiat.* 4: pl. 447, fig. 2. 1854; Meijer, *Bot. Bull. Herb. Forest Dept. Sabah* 10: opp. 224. 1968.

A shrub or small to medium-sized erect tree, to 22 m. tall; trunk with a girth to "5 feet", the clear bole to 15 m. high, straight or crooked, to 30 cm. in diameter, the crown tall, rather narrow, to 5 m. high; buttresses to 1.5 m. high, 1.8 m. long, and 7.5 cm. thick; outer bark soft, about 4 mm. thick, smooth, soft, corky, papery, slightly cracked or finely fissured, sometimes scaly, white or whitish to yellowish, cream, brownish, or brown, sometimes "dippled blackish-gray" or concolorous and light-brown; inner bark 2.5--6 mm. thick, soft, fibrous, whitish to yellow or yellowish, pale-yellow near the cambium; cambium yellow or yellowish; sapwood white to light-yellowish or yellow; slash wood hard or soft, white or yellow to light-brown; branches spreading, terete or the younger ones somewhat compressed, at first more or less stellate-pubescent with brown hair, ultimately glabrescent; twigs horizontal, brown-scurfy or brown-powdery; leaves alternately in opposite pairs and solitary, the young ones brown-pubescent; petioles 2--4 cm. long, more or less brown-stellate-pubescent; leaf-blades coriaceous to chartaceous, sub-erect, flat, dark-green and dull to slightly glossy above, pale or yellowish beneath, ovate to oblong-ovate, 9--17 cm. long, 5--9 cm. wide, apically long- and slenderly subcaudate-acuminate, marginally entire, basally abruptly acuminate, practically unicolor on both surfaces and brunnescens in drying, at first slightly stellate-pubescent above with the hairs more numerous on the midrib and secondaries, eventually subglabrous, slightly stellate-pubescent with brown hairs or brown-scurfy to brown-powdery beneath and there with numerous, small, yellow glands; secondaries about 8 per side, strongly prominent beneath; tertiary cross-vein reticulum subparallel and distinct, the veins and veinlets often decidedly yellow-brown; inflorescence more or less stellate-pubescent with brown hairs or brown-scurfy throughout; cymes axillary, solitary, to 10 cm. long and wide, mostly dichotomously branched, rather densely brown stellate-pubescent; peduncles 2--4 cm. long, about as long as the subtending petioles, green but brown-powdery; pedicels 1--2 mm. long; calyx cupuliform, 2 mm. long, externally somewhat pubescent, the rim with 5 short, rather broad-based, and apically rather sharp teeth; flower-buds greenish, brown-powdery; corolla pentamerous, about 5 mm. long, externally glandulose, the tube apically somewhat amplicate, the limb 5-lobed, the lobes oblong, about 2 mm. long, apic-



ally blunt; filaments exserted, purple; anthers about 2 mm. long, yellow or purple, more or less glandulose; style purple; stigma light-purple or white; fruit drupaceous, elliptic or globose, about 4 mm. long, 5--6 mm. wide, flattened at both ends, fleshy, green or greenish when young, later red or bright-red to scarlet, finally black or black-purple, drying dark-brown.

This species is based on a specimen in the Roxburgh herbarium from the Molucca Islands. The original (1820) description reads: "10. *C. pentandra* R. Shrubby, tender parts mealy. Leaves opposite, with an alternate one between, oblong, entire and cuspidate. Corymbs axillary. Flowers pentandrous. Stigma from three to four-lobed. A native of the Moluccas."

Merrill's *Geunsia hookeri* is based on *Cuming* 1773 from Cebu in the Philippine Islands. The type collection has been annotated by various botanists as *G. farinosa* Blume and as *Callicarpa pentandra* Roxb. Merrill (1912) explains that "Duplicates of the above number were referred by Schauer to *Callicarpa pentandra* Roxb. = *Geunsia farinosa* Blume, but Sir Joseph Hooker in his 'Flora of British India' under *Geunsia farinosa* [*sic*] Blume says 'Cuming's No. 1773, reduced to *G. farinosa* by Schauer, is probably, as stated in Gen. Pl. 2: 1150, a good species'. It seems to me to be much more distinct from Blume's species than is *Geunsia cumingiana* (Schauer) Rolfe, which Hooker thinks is perhaps not distinct from *G. farinosa* Blume. In this genus, as in *Callicarpa*, the amount of pubescence on different forms seems to vary considerably, but *Geunsia hookeri*, above described, is distinguished from the previously described forms especially by its very scanty pubescence, which by no means covers the lower surface of the leaf, as [it does] in *G. farinosa*, [*sic*] and in *G. cumingiana*." In 1923 Merrill realized that his *Geunsia hookeri* was really the same taxon as Roxburgh's original *Callicarpa pentandra* and so he renamed the species *Geunsia pentandra* (Roxb.) Merr.

Lam (1919) also reduced *G. hookeri* to "*G. pentandra* Merr.", while Bakhuizen (1921) reduced it to *Callicarpa pentandra* var. *typica* f. *hexandra* (Teijsm. & Binn.) Bakh. Lam included also "*C. pentandra* Roxb. (pro parte) and *C. apoensis* Elm. in the synonymy of *G. pentandra* Merr., commenting that "Schauer.....meant, that *Callicarpa pentandra* and *Geunsia farinosa* should be identical. This is certainly, perhaps partly, not exact. Merrill....in the opinion that *Callicarpa pentandra* is a *Geunsia*, described it..... as *G. hookeri*, which name he altered, in 1916, into *G. pentandra*, a species, which is undoubtedly quite different from Blume's *G. farinosa*. As Schauer, King & Gamble are in the opinion that *Callicarpa pentandra* and *Geunsia farinosa* are identical. The error of this supposition will be clear from our definitions of the several species."

Hallier (1918) kept *Geunsia pentandra* Merr. and *G. hookeri* Merr. apart as separate species, assigning the former to the Moluccas and the latter to Cebu. Walpers (1845) remarked, for *Callicarpa pentandra*, that "Certe non hujus generis erit." Koorders & Valtton (1900) reduced *G. pentandra* in the synonymy of *G. farinosa*

Blume. Griffith's "*Callicarpa* [sic] *lanata* Roxb." is said to be a native of Bhamo, in Upper Burma, and from the accompanying illustration is pentamerous, so there is not much doubt that it represents *Geunsia pentandra*; it certainly is not *Callicarpa tomentosa* (L.) Murr. (which is what is now regarded as the true *Callicarpa lanata* of Roxburgh).

Bakhuizen (1921), in what must be the ultimate in taxonomic conservatism, united in the synonymy of what he called *Callicarpa pentandra* the following: *C. acuminatissima* Teijsm. & Binn., *C. affinis* Elm., *C. apoensis* Elm., *C. basilanensis* Merr., *C. cauliflora* Merr., *C. cumingiana* Schau., *C. epiphytica* Elm., *C. flavida* Elm., *C. hexandra* Teijsm. & Binn., *C. megalantha* Merr., *C. paloensis* Elm., *C. ramiflora* Merr., *C. subglandulosa* Elm., *C. surigensis* Merr., and *C. weberi* Merr., *Geunsia acuminatissima* (Teijsm. & Binn.) H. J. Lam, *G. anisophylla* H. Hallier, *G. cinnamomea* H. Hallier, *G. cumingiana* (Schau.) Rolfe, *G. epiphytica* (Elm.) H. J. Lam, *G. farinosa* Blume, *G. flavida* (Elm.) H. J. Lam, *G. grandiflora* H. Hallier, *G. hexandra* (Teijsm. & Binn.) Koord., *G. hookeri* Merr., *G. homoeophylla* H. Hallier, *G. pentandra* (Roxb.) Merr., *G. pullei* H. J. Lam, *G. quaternifolia* H. Hallier, *G. serrulata* H. Hallier, and *G. subternata* H. Hallier!

Meijer (1968) describes *Geunsia pentandra* as follows: "This is a fastgrowing belukar tree in logged over forest on rather fertile soils [in Sabah], surviving about 10--15 years after logging and reaching girth limits up to 5 feet. It occurs from sea level up to about 4500 feet altitude.....The leaves are.....arranged in a way to avoid shading of the leaf on the underside of a twig by that on the upper side.....The tree is often confused by our field staff with *Vernonia arborea* which simulates it in its bark, wood and leaves but which never has opposite leaves and entirely different flowers and fruits. The final word about the separation of *Geunsia* from *Callicarpa* is still not yet spoken." He erroneously refers to the fruit as "berries" and uses *Callicarpa pentandra* and *Geunsia pentandra* as "alternate names".

Vernacular names reported for the species are "bëbëtik baboel", "bibati", "bilau", "feri", "guisok-magami", "haiesu", "hai'isu", "hoeoet", "kahómbu", "ki", "ki bang bara", "kilhoeoet", "la yaupan", "molkuro", "multi", "sor-ku-ku", "tambong", "tananáloep'a", and "tananá-loep'a".

Hansford (1961) records the fungus, *Asteridiella callicarpae* (Stev. & Rold.) Hansf. [*Irenina callicarpae* Stev. & Rold.] from this host, citing "BO 12849" from Java.

Heyne (1917), who combined *G. pentandra* with *G. farinosa* under the latter name, asserts that "In de Lampongsche Districten [Sumatra] wordt de fijngewreven wortelbast op gezwollen gesmeerd."

Merrill (1923) cites *Cuming* 1773 and *Elmer* 9739, 10362, & 11491 from Cebu, Mindanao, and Negros in the Philippines, commenting that the plant inhabits forests at low and medium altitudes, ascending to 1700 m. He gives its extra-limital distribution, as known to him, as Java, Celebes, Amboina, and New Guinea. White (1929) cites *Brass* 659 from Papua. Fletcher (1938) cites *Curtis*

2532 from Langkawi and Keith s.n. from Thailand, giving the extra-limital distribution, as known to him, as Malaya and the Philippines. He also combines *G. farinosa* with *G. pentandra*, but adopts the latter name.

Whitmore (1966) cites Brass 2625 and Waterhouse 114 from the Solomon Islands; Foreman (1972) cites Kajewski 1560, 1643, & 1841, Waterhouse 103b & 769a-b, and Waterhouse & Yale 114 from Bougainville Island.

Hartley and his associates (1973) describe *G. pentandra* as a small tree and encountered it in the scrub in back of ocean beaches, citing their nos. 9648, 9729, & 11910 from New Guinea and found no alkaloids present in either roots, bark, or leaves.

Elmer's *Callicarpa subglandulosa* is based on Elmer 9739 from Negros island in the Philippines and certainly belongs in the present species' synonymy.

Collectors have found *Geunsia pentandra* growing in yellowish soil, along river banks, in forest margins, on flat land, hillsides, and ridgetops, in primary (often swampy) and well-drained secondary forests, in light, disturbed, and culled forests, in logged-over areas in general, in valley bottoms and ravines, and in shallow old volcano craters, at 1.2--1950 m. altitude, in flower from July to May, and in fruit in February, May, June, and August to December.

The corollas are said to have been "pure-white" on Elmer 9739, "white" on Herb. Brit. Sol. Isls. Prot. 5977 & 6260 and Kajewski 1643, "whitish-pink" on Herb. Philip. Bur. Sci. 44362, "pinkish" on SAN.19028, 54870, & 88279, "pink" on Brass 2625, "lilac" on Balgooy 2269, Robinson 1860 & 1861, and Rutten 1658, "reddish" on SAN.36021, "violet" on Eballo 1189, "violet-purple" on Herb. Philip. Bur. Sci. 43349, "purplish" on Herb. Sarawak For. Dept. S.35599, "purple" on Chai S.34099 and SAN.68316, "pale-red & green" on SAN.39957, "greenish" on Wing A.285, and "green" on SAN.21640.

The illustration in Meijer (1968) is drawn from SAN.39957. Bakhuisen (1921) cites Schauer's (1847) reference as page "664" instead of the actual page 646. The Miquel (1858) reference, also in the bibliography (above), is sometimes erroneously cited as "1856" or "1857"; similarly, the Walpers (1845) reference is often incorrectly cited as "1840: or "1848". Sinclair mistakenly refers to the fruit of this species as "berries" instead of as drupes.

Material of *G. pentandra* has been misidentified and distributed in some herbaria as *G. acuminatissima* Bold., *G. cinnamomea* H. Hallier, and *G. farinosa* Blume, as well as *Callicarpa arborea* Roxb., *C. cumingiana* Schau., *C. paloensis* Elm., *C. pentandra* var. *apoensis* Bakh., *C. pentandra* f. *farinosa* (Blume) Bakh., *C. pentandra* var. *pentandra* f. *farinosa* (Blume) Bakh., *C. tomentosa* Murr., *C. sp.*, and *Gmelina asiatica* L. On the other hand, the Elbert 3040 & 3486, distributed as *G. pentandra*, are actually *C. cinnamomea* H. Hallier, while Barker & Vinas LAE.66686, Carr 12824, Floyd 6477, Frodin NGF.26229, and Hoogland 3482 are *G. cumingiana* (Schau.) Rolfe, *Ampuria* SAN.32658 & SAN.32630, *Blume* s.n. [Java], Boeea 7457, Brand SAN.30933, Cockburn SAN.65605, Elbert 3040, Fox SAN.57700,

*Herb. Neth. Ind. For. Serv. bb.21756, Kokawa & Hotta 208, Kollmann s.n.* [Java, 1838], *Lajangah SAN.36123, Lütjeharms 4562, Madani SAN.33151, Sam A.1721, Sam & Sisiron s.n.* [Sandakan Herb. 19291], and *Toroos 5010* are *G. farinosa* Blume, *Ampuria SAN.33306* and *Native Collector 5122* are *G. furfuracea* (Bakh.) Mold., *Krukoff 4351* and *Toroos 5104* are *G. grandiflora* H. Hallier, *Elbert 2690* is *G. hexandra* (Teijsm. & Binn.) Koord., *Bartlett 6448, Krukoff 248 & 349, are Toroos 1045* are *Callicarpa arborea* Roxb., and *Robinson s.n.* [Herb. Philip. Bur. Sci. 11502] is *C. basilanensis* Merr. *Herb. Blume s.n.* [Herb. Lugd.-Bat. 908.266-921] is a mixture of *Geunsia pentandra* and *Sterculia* sp.

Citations: INDIA: State undetermined: *Wallich s.n.* (S). MALAYA: Selangor: *Balgooy 2269* (Ac). PHILIPPINE ISLANDS: Bohol: *M. Ramos s.n.* [Herb. Philip. Bur. Sci. 43349] (Bz--18532, Ca--242450, W--1292611). Cebu: *Cuming 1773* (Le--908.266-873, Z). Jolo: *Ramos & Edaño s.n.* [Herb. Philip. Bur. Sci. 44362] (B, Bz--18487, Ca--257635, W--1527672). Mindanao: *M. S. Clemens 271* (Mu); *Ebalo 1189* (Mi); *Zwickey 117* (Ca--8064, Mi, N). Negros: *Elmer 9739* (Bz--18331, N, Vt), *10362* (Bz--18330). GREATER SUNDA ISLANDS: Celebes: *Elbert 3040* (N), *3486* (N); *Kaudern 417* (N); *Teijsmann 14092* (Bz--18534, Bz--18535). Java: *Arsin 19528* (Bz--18517, Bz--18518, Bz--18519); *Backer 9951* (Bz--18520, Bz--18521, Bz--18522), *25899* (Bz--18514, Bz--18515, Bz--18516); *Bakhuizen Jr. 3282* [3284] (Ut--24878A); *Blume s.n.* [Java] (Ca--918516, Le--908.266-866, Le--908.266-887, Le--908.266-916, Le--908.266-921 in part, Le--908.266-1357, M, N, T, Z); *Collector undetermined s.n.* [Salah] (Le--908.266-907), *s.n.* [Salatz] (Le--908.266-874), *s.n.* (Le--908.266-856, Le--908.266-885, Le--908.266-905); *Dakus 66* (Bz--18212, Bz--18213); *DeVriese 31* (Le--908.265-340); *Forbes 315* (Bz--18525, Bz--18526), *375* (Bz--18524), *539c* (Bz--18523), *602* (Bz--18527, Bz--18528); *Junghuhn 11518* (Cb, Le--908.335-798, Z); *Kollmann s.n.* (M, M, Mu--986); *Koorders 24452b* [920] (Bz--18327, Bz--18328); *Korthals s.n.* (Le--944.234-97); *Reinwardt 22a* (Le--908.266-915), *s.n.* (Le--908.266-884); *Samba 12* [Boschproefst. Ja.3144] (Bz--18174); *Teijsmann s.n.* (Le--908.266-875). Kalimantan: *Beccari 786* (Mu--1655); *Slooten 2279* (B). Sabah: *Ambullah SAN.36021* (Z); *Chai SAN.21640* (Ld); *Fedilis & Sumbing SAN.88279* (Sn); *Sinangul SAN.39957* [Herb. For. Dept. 40643] (Ld); *Sinclair 9257* (W--2946380); *J. Singh SAN. 21391* [Herb. For. Dept. 40629] (Ld); *Talip SAN.54870* (Ld), *SAN. 68316* (Sn--40649); *Wing A.285* (Kl--8425), *SAN.19028* (Sn--40614). Sarawak: *Chai S.34099* (W--2801358); *Ilias & Azahari s.n.* [Herb. Sarawak For. Dept. S.35599] (Ld). Sumatra: *Bartlett 6448* (N); *Boea 7879* (S); *Collector undetermined 23* (Le--908.266-844), *s.n.* (Le--908.266894, Ut--53402); *Krukoff 248* (N), *349* (N); *Toroos 1045* (N, S). MOLUCCA ISLANDS: Amboina: *C. B. Robinson 1860* (Bz--18530, Le--920.191-154, W--775246), *1861* (N, W--77524); *Teijsmann H.B. 1973* (Bz--18529). Ceram: *Rutten 1658* (Bz--18479, Ca--236612, Ut--802621). Ternate: *Beguín 689* (Bz--18484). NEW GUINEA: West Irian: *VanLeeuwen 10577* (Bz--72661). SOLOMON ISLANDS: Bougainville: *Kajewski 1560* (Bi, Bz--18542), *1642* (Bi, Bz--18537, Bz--18544), *1841* (Bi, Bz--18538, Bz--18540); *Waterhouse 114* [Mus. Yale School

For. 22825] (N). New Georgia: *Maenu'u s.n.* [Herb. Brit. Sol. Isls. Prot. 5977] (W--2578780), *s.n.* [Herb. Brit. Sol. Isls. Prot. 5993] (W--2578798). San Cristoval: *Brass 2625* (Bi, Bz--18536, Bz--18539); *Forbes 602* (Bz--18527, Bz--18528). Ulawa: *Teona s.n.* [Herb. Brit. Sol. Isls. Prot. 6260] (W--2578151). CULTIVATED: Java: *Herb. Hort. Bot. Bogor. s.n.* (Bz--18323, Bz--18324, Bz--18325, Bz--18326); *Teijsmann s.n.* (Le--908.266-895). LOCALITY OF COLLECTION UNDETERMINED: *Collector undetermined s.n.* (Le--908.266-846, Le--908.266-854, Le--908.266-864); *Splitgerber s.n.* [Laeti, Junio] (Le--944.234-14), *s.n.* [Salak, Decbr.] (Le--944.234-98).

*GEUNZIA PENTANDRA* var. *ALBIDELLA* Mold., *Phytologia* 5: 10. 1954.

Bibliography: Bakh. in Lam & Bakh., *Bull. Jard. Bot. Buitenz.*, ser. 3, 3: 15. 1921; Mold., *Phytologia* 5: 10. 1954; Mold., *Résumé* 204 & 456. 1959; Mold., *Fifth Summ.* 1: 340 (1971) and 2: 879. 1971; Altschul, *Drugs Foods* 245. 1973; Mold., *Phytol. Mem.* 2: 330 & 548. 1980; Mold., *Phytologia* 50: 55 (1981) and 50: 224. 1982.

This variety differs from the typical form of the species in having the lower leaf-surfaces more or less densely white-tomentelous or white-furfuraceous as well as resinous-glandulose.

The variety is based on *Kajewski 2340* from the rainforest at sealevel at Quomonapu, Malaita, British Solomon Islands, collected on December 11, 1930, and deposited in the Buitenzorg herbarium. The pubescence on the lower leaf-surface is exactly like that seen in *G. furfuracea* (Bakh.) Mold., but the flowers and fruit are much smaller and the anthers much shorter, exactly as in typical *G. pentandra* (Roxb.) Merr.

Kajewski describes the plant as a small tree, 10--15 m. tall, growing in rainforests from sealevel to 1200 m. altitude, the fruit black or purple-black when ripe, subglobose, 3--3.5 mm. long and wide (incorrectly written on some labels as "3 cm."), "with a small hole at the base". He records the local vernacular names, "kimberi", "kim-berri", and "quoi-esa", and states that the bark macerated in water is imbibed in the treatment of colds. He found the plant in fruit in April.

Citations: SOLOMON ISLANDS: Guadalcanal: *Kajewski 2485* (Bi, Bz--18315, Bz--18320, Bz--18321), *2540* (Bi, Bz--18316, Bz--18319, Z). Malaita: *Kajewski 2340* (Bi--isotype, Bz--18317--isotype, Bz--18318--type).

*GEUNZIA PULLEI* H. J. Lam, *Verbenac. Malay. Arch.* 35. 1919.

Bibliography: H. J. Lam, *Verbenac. Malay. Arch.* 31, 35, & 365. 1919; Bakh. in Lam & Bakh., *Bull. Jard. Bot. Buitenz.*, ser. 3, 3: 11, 13, 111, & xii. 1921; A. W. Hill, *Ind. Kew. Suppl.* 6: 91. 1926; Fedde & Schust., *Justs Bot. Jahresber.* 60 (2): 572. 1941; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 1, 67 & 93. 1942; H. N. & A. L. Mold., *Pl. Life* 2: 77. 1948; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 2, 149 & 185. 1949; Mold., *Résumé* 201 & 456. 1959; Mold., *Fifth Summ.* 1: 336 (1971) and 2: 879. 1971; Mold., *Phytol. Mem.* 2: 327 & 548. 1980; Mold., *Phytologia* 50: 55 & 56 (1981) and 50: 150 & 296. 1982.

A shrub, 3 m. tall, the young parts whitish- to brownish-farinose, eventually glabrescent; petioles 2.5--4 cm. long, whitish- or brownish-farinose; leaf-blades oblong-lanceolate, 14--18 cm. long, 5--7.5 cm. wide, apically long-acuminate, marginally entire, basally acute and long-decurrent into the petiole, at first stellate-puberulent above, later glabrous or (especially on the veins) scattered-glandulose and stellate-pilose, at first stellate-tomentose beneath, later subglabrescent or subtomentose and eglandulose, typically with the vein-reticulation minutely more rugose; secondaries 7--9 per side; cymes axillary, small, 2.5--4.5 cm. long, 2--4 cm. wide, whitish- or brownish-farinose; peduncles 2--2.7 cm. long; calyx densely stellate-puberulent, externally with scattered scale-like glands, the rim 5-dentate; corolla red-lilac, pentamerous, 5--6 mm. long, the tube narrow, externally softly pubescent, glandless or with scattered glands, the limb 5-lobed, the lobes dorsally centrally long-pilose; stamens 5, about 8 mm. long, long-exserted; anthers ellipsoid, about 1 mm. long and 0.5 mm. wide, sparsely glandulose; style 9 mm. long; stigma capitate; ovary externally glabrous, eglandulose, 5-celled, each cell 2-ovulate; fruits red.

This species is based on *Pulle* 261 from near Kloofbivak in the former Dutch New Guinea [West Irian], collected on October 21, 1912, and deposited in the Leiden herbarium. It is named in honor of its distinguished collector, August Adriaan Pulle (1878--1955), who collected also in Argentina and Surinam and whom my wife and I remember with deep affection from our association with him in Curaçao and Argentina many years ago.

Lam (1919) cites only the type collection and comments that "Our species has an affinity with *G. pentandra* with which it is in conform[ity], among other things, in the minute reticulation of the lower side of the leaves. Differences are the gradually, not abruptly decurrent base of its leaves, its less numerous nerves, its small cymes, its hairy corolla and its glabrous and eglandular ovary."

This is one of the many, often very disparate, taxa which Bakhuizen (1921) unites under *G. pentandra*.

Citations: NEW GUINEA: West Irian: *Pulle* 261 (Bz--18486--isotype, Le--926.340-108--type, Z--isotype).

*GEUNZIA QUATERNIFOLIA* H. Hallier, Meded. Rijks Herb. Leid. 37: 24--25. 1918.

Bibliography: H. Hallier, Meded. Rijks Herb. Leid. 37: 24--25. 1918; H. J. Lam, Verbenac. Malay. Arch. 41 & 365. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 11, 111, & xii. 1921; E. D. Merr., Bibl. Enum. Born. Pl. 511. 1921; A. W. Hill, Ind. Kew. Suppl. 6: 91. 1926; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 65 & 93 (1942) and ed. 2, 146 & 185. 1949; Mold., Résumé 193, 195, & 456. 1959; Mold., Fifth Summ. 1: 324 (1971) and 2: 879. 1971; Mold., Phytol. Mem. 2: 315 & 548. 1980; Mold., Phytologia 50: 57 & 64. 1981.

A tree, the youngest parts densely ferruginous-tomentellous;

mature branchlets terete, 4--6 mm. thick, dark-fuscous and ferruginous to gradually glabrescent, the oblique or plagiotropic ones with plainly anisophyllous leaves, marked with 2 prominent transverse annular pseudo-stipular rings between the opposite leaves: leaves opposite and subquaternate, anisophyllous, the lower whorls of leaves with somewhat larger approximately equal pairs, the upper whorls with more remote larger and also several times smaller pairs or the whorls with 3 leaves equal and the 4th smaller; petioles semiterete, short, usually 1--1.7 cm. long, angular on the under surface, cinereous- or subochraceous-tomentellous throughout; leaf-blades chartaceous or membranous to herbaceous, the larger 3 of each whorl oblong or broadly ovate, to 20 cm. long in all and 10--10.5 cm. wide, dull dark-green, apically shortly and broadly acuminate to cuspidate (the cusp about 1.5 cm. long and basally 2 cm. wide), the 4th one of the upper whorls 8--9 cm. long and 4--4.5 cm. wide, all marginally entire or somewhat obsoletely and minutely sinuate-denticulate, basally minutely and abruptly attenuate or protracted into the petiole in the manner of *Tectona grandis*, glabrous above except for the ferruginous-tomentellous midrib, cinereous- or subochraceous-tomentellous beneath; secondaries 10 or 11 per side; venation inconspicuous above, prominently pinnate and clathrate beneath and because of the tomentum only obsoletely reticulate; inflorescence corymbose, cinereous- or subochraceous-tomentellous, the corymbs axillary only to the quaternate and opposite leaves, twice dichotomous, 7--10 cm. long, 7--7.5 cm. wide, densely flowered; peduncles terete, robust, 5--6 cm. long, several times longer than the subtending petioles; bracts 2, subtending the primary dichotomies of the inflorescence, slightly elevated, lanceolate-linear, spirally recurved, about 5 mm. long; bractlets similar but gradually smaller; pedicels short, scarcely 1 mm. long; flowers pentamerous; calyx cupuliform, 1.5--2 mm. long, densely fulvous and stellate-tomentose, the rim shortly and acutely 5-denticulate; corolla (in bud) elongate-ovoid, about 4.5 mm. long or 2 1/2 times the length of the calyx, the tube about 4 mm. long, externally densely and softly cinereous-pulverulent on the upper part, glabrous below, not glandulose nor coarsely stellate-tomentose, the limb 5-lobed, the lobes oblong, 1--1.5 mm. long, apically rounded; stamens 5, inserted at the bottom of the corolla-tube, slightly exserted; filaments with a few scattered, subcapitate, and subsessile glands; anthers elongate, 3--3.5 mm. long, narrow, obtuse, basally sagittate, apically shortly and introrsely 2-channelled, dorsally pulverulent-puberulent, not conspicuously glandular-punctate; style 8 mm. long, scarcely surpassing the stamens, clavate; stigma broadly capitate, lobed; immature fruit drupaceous, globose, about 2.5 mm. long and wide, apically densely pubescent or sparsely pulverulent-puberulent except at the centrally umbilicate apex, closely invested by the cupuliform merely obsoletely dentate fruiting-calyx.

This species is based on *Amdjah* 665 from Bukit Sungel Tuhlit,

at about 100 m. altitude, in eastern Kalimantan, Borneo, collected in flower and immature fruit in September, 1912, and deposited in the Leiden herbarium. Lam (1919) comments that "This species has an affinity with *G. homiophylla*, but differs from it by its broader leaves, its longer corolla-tube and its shorter lobes; also by its pubescent ovary; points of conformity are the softly pubescent corolla and the non-glandular anthers."

Material of this species has been misidentified and distributed in some herbaria as *Callicarpa pentandra* var. *paloensis* f. *furfuracea* Bakh.

Citations: GREATER SUNDA ISLANDS: Celebes: *Rachnat* 637 (Bz--18563). Kalimantan: *Amdjah* 665 [N. Y. Bot. Gard. phot. neg. E-4199] (Bz--18266--isotype, Bz--18267--isotype, Le--918.302-19--type, Le--919.329-15--isotype, N--isotype, N--photo of type, N--photo of type, Z--photo of type).

*GEUNZIA RAMOSI* Mold., *Phytologia* 5: 10. 1954.

Bibliography: Mold., *Phytologia* 5: 10. 1954; Mold., *Résumé* 184 & 456. 1959; G. Taylor, *Ind. Kew. Suppl.* 12: 63. 1959; Mold., *Fifth Summ.* 1: 317 (1971) and 2: 879. 1971; Mold., *Phytol. Mem.* 2: 307 & 548. 1980; Mold., *Phytologia* 50: 55. 1981.

A shrub or tree; branchlets rather slender, more or less tetragonal, very obscurely pulverulent-puberulent or glabrescent; nodes annulate; principal internodes abbreviated, 6--13 mm. long; leaves decussate-opposite; petioles slender, 1.3--2 cm. long, very obscurely and minutely pulverulent-puberulent, sometimes also scattered-pilose toward the base, or glabrescent; leaf-blades thinly chartaceous, bicolored in drying, nigrescent above and silvery beneath, narrowly elliptic, 6--13.5 cm. long, 1.7--2.5 cm. wide, apically gradually narrowed to a long-attenuate or subacuminate tip, marginally entire, basally attenuate-acute, glabrous above, densely appressed-furfuraceous to form a silvery mat beneath; midrib very slender, flat above, prominulous beneath; secondaries very slender, 9 or 10 per side, arcuate-ascending, disappearing at the margins, not anastomosing; veinlet reticulation abundant, indiscernible above, plainly prominulous above the furf beneath; inflorescence axillary, cymose; cymes solitary in the upper leaf-axils, 2 per node, much shorter than the subtending leaves, about 5 cm. long and wide; peduncles slender, about 2 cm. long; inflorescence-branches widely dichotomous, very minutely puberulous or glabrate, sometimes scattered-pilose; pedicels glabrate, about 1 mm. long; flowers not known; bractlets linear, about 3 mm. long, glabrate; fruiting-calyx patelliform, about 2 cm. wide, glabrate; fruit drupaceous, subglobose, about 3 mm. long and wide, fleshy, glabrous.

This species is based on *Ramos & Edaffo s.n.* [Herb. Philip. Bur. Sci. 33838], collected on Mount Bagacay in Camarines Province, Luzon, Philippine Islands, deposited in the Britton Herbarium at the New York Botanical Garden, originally misidentified and distributed as *Callicarpa angusta* Schau. Thus far it is known only from the type collection.



Citations: PHILIPPINE ISLANDS: Luzon: *Ramos & Edano s.n.* [Herb. Philip. Bur. Sci. 33838] (Bz--18248--isotype, N--type).

*GEUNZIA SCANDENS* Mold., *Phytologia* 49: 430. 1981.

Bibliography: Mold., *Phytologia* 49: 430 (1981) and 50: 253 & 269. 1982.

A woody climber, attaining a height of at least 10 m.; stems brownish, stout, very obtusely subtetragonal or subterete, densely floccose-tomentose with ferruginous hairs; leaves (as far as observed) opposite, decidedly anisophyllous, one large and one small at each node; petioles very stout, 1.5--2.5 cm. long, flattened and canaliculate above, rounded beneath, densely floccose-tomentose, laterally bicostate because of the decurrent leaf-base; leaf-blades firmly chartaceous or even subcoriaceous, broadly elliptic, the smaller ones to 22 cm. long and 11 cm. wide, the larger ones to 40 cm. long and 22 cm. wide, all apically short-acuminate, marginally entire, basally acuminate and decurrent into the petiole, appressed-puberulent and brunnescent above in drying, vety densely ochraceous- or grayish-tomentose beneath; midrib stout, densely tomentose beneath and somewhat so above; secondaries 8 or more pairs, arcuate-ascending, very prominent beneath and slightly so above; veinlet reticulation prominulous beneath and under a handlens also above; inflorescence cymose, axillary, pedunculate, rather small, many-flowered, dichotomous, densely ferruginous-tomentose throughout; peduncles about 4 cm. long; bracts few, linear, about 2 mm. long; corolla purplish-white; mature flowers and fruit not seen.

This species is based on *Aban & Petrus SAN.90680* from a secondary forest on a steep slope near a road at Ulu Sg. Lokan, Lamag District, Sabah, collected on November 10, 1979, and deposited in my personal herbarium.

Citations: GREATER SUNDA ISLANDS: Sabah: *Aban & Petrus SAN. 90680* (Z--type).

*GEUNZIA SERRULATA* H. Hallier, *Meded. Rijks Herb. Leid.* 37: 27--28. 1918.

Bibliography: H. Hallier, *Meded. Rijks Herb. Leid.* 37: 27--30. 1918; H. J. Lam, *Verbenac. Malay. Arch.* 42--44 & 365. 1919; Bakh. in Lam & Bakh., *Bull. Jard. Bot. Buitenz.*, ser. 3, 3: 11, 111, xi, & xii. 1921; E. D. Merr., *Bibl. Enum. Born. Pl.* 511. 1921; A. W. Hill, *Ind. Kew. Suppl.* 6: 91. 1926; Mold., *Alph. List Inv. Names* 24. 1942; Mold., *Known Geogr. Distrib. Verbenac.*, ed. 1, 65 & 93 (1942) and ed. 2, 146 & 185. 1949; Mold., *Résumé* 192, 193, 295, & 456. 1959; Mold., *Fifth Summ.* 1: 324 (1971) and 2: 519 & 879. 1971; Mold., *Phytol. Mem.* 2: 315 & 548. 1980; Mold., *Phytologia* 50: 57 (1981) and 50: 260 & 269. 1982.

A small or medium-sized tree, the youngest parts ochraceous- or almost cinnamomeous-farinose; branchlets 3--6 mm. thick, obsoletely angular, minutely yellowish-farinose or rather loosely ochraceous-pulverulent or -puberulent, finally glabrescent;

nodes at the opposite leaves either not annulate or incompletely so; principal internodes beneath the opposite leaves 5--20 mm. long, above them 3--5 cm. long; leaves opposite and alternate, manifestly anisophyllous, not conspicuously subternate, the opposite ones larger and subequal, the alternate ones considerably above the others and much smaller, all long-petiolate; petioles 1--2.5 cm. long, rather loosely ochraceous-pulverulent or -puberulent to minutely yellowish-farinose; leaf-blades herbaceous to membranous or subchartaceous, ovate or ovate-lanceolate, the 3 larger ones to 16.5 cm. long and 8.5 cm. wide, apically acutely long-acuminate (the acumen 2.5 cm. long and basally 1--1.5 cm. wide), marginally conspicuously serrulate or serrate toward the apex, basally more shortly acuminate or acute, the smaller ones ovate-lanceolate, to 9 cm. long and 6 cm. wide, basally subrotund, all slightly shiny and dark-green above when fresh, dark-cinnamomous in drying when young and marked with deciduous cinnamomeous stellate hairs, on maturity glabrous except for the pulverulent-puberulent midrib and sordid-green with paler and conspicuous close vein-reticulation, densely white- or ochraceous-tomentellous beneath or minutely yellowish-white or yellowish-brown tomentose and prominently pinnate- and rather prominently clathrate-veined; secondaries 9 or 11 per side; cymes ample, several times divaricate-dichotomous, 6--11.5 cm. long, 4--11 cm. wide, their branches rather loosely ochraceous-pulverulent or -puberulent to minutely yellowish-farinose; peduncles stout, to 6.5 cm. long, much surpassing the petioles, rather loosely ochraceous-pulverulent or -puberulent above, glabrescent and dark-fuscous below; bracts small, linear, rigid, short, situated at the cyme dichotomies, the primary ones 3--5 mm. long and 2.5 mm. wide; pedicels scarcely 1 mm. long; flowers pentamerous; calyx cupuliform, 1.3--1.5 mm. long, 1.5 mm. wide, externally always densely stellate-pubescent, the rim obsoletely 5-denticulate; corolla lilac, about 5 mm. long or about 4 times the length of the calyx, externally densely cinereous and pulverulent-puberulent and glandulose throughout but not coarsely stellate-tomentose, the tube about 3.5 mm. long, the limb 5-lobed, the lobes ovate, about 1.5 mm. long and 1 mm. wide; stamens 5, inserted in the corolla-tube, conspicuously exerted; filaments glabrous; anthers elongate, almost 3 mm. long, narrow, apically emarginate and shortly introrsely fissured, basally shortly sagittate, dorsally sparsely glandulose-punctulate on the connective but otherwise glabrous; style about 8 mm. long, somewhat surpassing the stamens, glabrous, angular-subulate, subclavate; stigma capitate, lobed; ovary externally glandular-dotted; immature fruit drupaceous, fuscous, depressed-globose, 2--3 mm. wide, apically impressed-umbilicate, under a hand lens vertically sparsely pale-(glandular?)-punctulate, semi-enclosed by the broadly cupuliform irregularly splitting fruiting-calyx.

The species is based on *Hallier B.801* from "am Ufer des Tangie oberhalb Sanggouw" in the Sambasstrom mountains of western Borneo, collected on October 20, 1893, and *Hallier B.749* from

"im Ladanggestrüpp hinter den Dajakendorf Dawar im Gebiet des oberen Tanggie", collected on October 27, 1893, both deposited in the Leiden herbarium. Lam (1919) comments that "The species has an affinity with *G. farinosa*, but differs from it by its more distinctly serrulate leaves, its shorter corolla-tube, and its always densely pubescent calyx."

Hallier (1918) regards his nos. B.1349 & B.1507 as varieties of or species related to *G. serrulata*, but I include them in the species as here described. He encountered them in a hill along with *Durio zibethinus*, *Pangium edule*, *Orchipeda sumatrana*, and *Casearia* sp.

The species has been collected in flower and fruit in October and December. The vernacular name, "ssibur bessie", has been recorded for it, and applied, it is said, because the lilac-colored flowers are reminiscent of those of *Memecylon* spp. (known as "kajub bessie" or ironwood).

Material of *Geunsia serrulata* has been misidentified and distributed in some herbaria as *Callicarpa hexandra* Teijsm. & Binn. and *C. pentandra* var. *paloensis* f. *furfuracea* Bakh.

Citations: GREATER SUNDA ISLANDS: Kalimantan: *H. Hallier* B.749 (Bz--18275--cotype), B.801 (Bz--18296--cotype, Bz--18297--cotype, Bz--18298--cotype, Le--918.330-1--cotype, Ut--80196--cotype), B.1349 (Bz--18269), B.1507 (Bz--18273, Bz--18274, Le--918.302-41). Sarawak: *Haviland & Hose* 3553e (Le--908.167-484).

*GEUNSIDA SERRULATA* f. *ANISOPHYLLA* (H. Hallier) Mold., stat. nov.

Synonymy: *Geunsia anisophylla* H. Hallier, Meded. Rijks Herb. Leid. 37: 29--30. 1918.

Bibliography: H. Hallier, Meded. Rijks Herb. Leid. 37: 29--30. 1918; H. J. Lam, Verbenac. Malay. Arch. 43 & 365. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 11, 111, & xi. 1921; E. D. Merr., Bibl. Enum. Born. Pl. 511. 1921; A. W. Hill, Ind. Kew. Suppl. 6: 91. 1926; Mold., Alph. List Inv. Names 24. 1942; Mold., Résumé 295. 1959; Mold., Fifth Summ. 2: 519. 1971; Mold., Phytologia 50: 57 (1981) and 50: 260 & 269. 1982.

This form is based on *H. Hallier* B.2741 from "im jungen Holz am unteren Teil des Aufstieges von Nanga Raun zum Liang Gagang" in the "Müllergebirge" of western Borneo, collected on March 14, 1894, and deposited in the Leiden herbarium. The collector describes the plant in detail in his 1918 work and comments that it comprises "mehrere mässiggrosse *Callicarpa*-ähnliche Bäume.... Blätter oberseits schwach glänzend dunkelgrün, mit helleren Mittel- und Fiedernerven, unterseits matt graugrün, mit gelbgrünen, stark hervortretendem Nervennetz. Früchte glänzend scharlachroth, fleischig, mit 10 Samen."

In this form the nodal annulation is always complete and conspicuous, the petioles are to 3 cm. long, and the leaf-blades are narrowly lanceolate, marginally entire, and the apical acumen is 2 cm. long. The fleshy fruit is scarlet when ripe.

Citations: GREATER SUNDA ISLANDS: Kalimantan: *H. Hallier* B.2741 (Bz--18293--isotype, Bz--18294--isotype, Bz--18295--isotype, Le--918.302-43--type, Ut--80195--isotype, Z--isotype).